



SEQUENCE LISTING

<110> SCARPACE, PHILIP J.
LI, GANG

<120> RAAV VECTOR-BASED PRO-OPIOMELANOCORTIN COMPOSITIONS AND METHODS
OF USE

<130> 4300.015400

<150> 60/462,496
<151> 2003-04-11

<160> 54

<170> PatentIn version 3.2

<210> 1
<211> 804
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Met Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser Ser Gly
85 90 95

Ser Ser Gly Ala Gly Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp
100 105 110

Cys Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala
115 120 125

Lys Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe
130 135 140

Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr
145 150 155 160

Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe
165 170 175

Lys Arg Glu Leu Thr Gly Gln Arg Leu Arg Glu Gly Asp Gly Pro Asp
180 185 190

Gly Pro Ala Asp Asp Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser
195 200 205

Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu
210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
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Ala Ile Ile Lys Asn Ala Tyr Lys Lys Gly Glu
260 265

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<212> DNA
<213> Gorilla gorilla
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<212> PRT
<213> Gorilla gorilla
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<400> 4

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Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
20 25 30

Phe Gly Arg Arg Asn Ser Ser Ser Ser Gly Ser Gly Ala Gly Gln
35 40 45

Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu
50 55 60

Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg Glu
65 70 75 80

Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
85 90 95

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
100 105 110

Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
115 120 125

Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly
130 135 140

Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala Glu
145 150 155 160

Lys Lys Asp Glu Gly Pro Tyr Gly Met Glu His Phe Arg Trp Gly Ser
165 170 175

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

<210> 5
<211> 795
<212> DNA
<213> Macaca nemestrina

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<212> PRT
<213> Macaca nemestrina

<400> 6

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Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser Ser Gly Ser
85 90 95

Ala His Gln Lys Arg Glu Asp Val Ala Ala Gly Glu Asp Arg Gly Leu
100 105 110

Leu Pro Glu Gly Gly Pro Glu Pro Arg Gly Asp Gly Ala Gly Pro Gly
115 120 125

Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly
130 135 140

Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly
145 150 155 160

Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu
165 170 175

Leu Thr Gly Gln Arg Pro Arg Ala Gly Asp Gly Pro Asp Gly Pro Ala
180 185 190

Asp Asp Gly Ala Gly Pro Arg Ala Asp Leu Glu His Ser Leu Leu Val
195 200 205

Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg
210 215 220

Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser
225 230 235 240

Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile
245 250 255

Lys Asn Ala Tyr Lys Lys Gly Gln
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<210> 7
<211> 496
<212> DNA
<213> Pongo pygmaeus

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<212> PRT
<213> Pongo pygmaeus

<400> 8

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Ala Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro
35 40 45

Arg Ser Asp Gly Ala Glu Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr
50 55 60

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg
65 70 75 80

Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala
85 90 95

Phe Pro Leu Glu Phe Lys Arg Glu Pro Thr Gly Gln Arg Leu Arg Glu
100 105 110

Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly Ala Gly Ala Arg Ala
115 120 125

Asp Leu Glu His Asn Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly
130 135 140

Pro Tyr Arg Met Glu His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys
145 150 155 160

Arg Tyr Gly Gly Phe
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<211> 804
<212> DNA
<213> Sus scrofa

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tataagatgg agcacttccg ctggggcagc ccgccccagg acaagcgcta cggcggcttc 720
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<210> 10
<211> 267
<212> PRT
<213> Sus scroffia

<400> 10

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Leu Leu Gln Ala Ser Met Gly Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Ser Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Ala Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Gly
85 90 95

Gly Gly Gly Gly Gly Gly Ala Gly Gln Lys Arg Glu Glu Glu
100 105 110

Val Ala Ala Gly Glu Gly Pro Gly Pro Arg Gly Asp Gly Val Ala Pro
115 120 125

Gly Pro Arg Gln Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp
130 135 140

Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn
145 150 155 160

Gly Ala Glu Asp Glu Leu Ala Glu Ala Phe Pro Leu Glu Phe Arg Arg
165 170 175

Glu Leu Ala Gly Ala Pro Pro Glu Pro Ala Arg Asp Pro Glu Ala Pro
180 185 190

Ala Glu Gly Ala Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala
195 200 205

Glu Ala Glu Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Lys Met Glu
210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
245 250 255

Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
260 265

<210> 11

<211> 798

<212> DNA

<213> Bos taurus

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<210> 12

<211> 265

<212> PRT

<213> Bos taurus

<400> 12

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20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Ser
85 90 95

Gly Val Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Asp Ala Glu Thr Gly Pro Arg Glu
115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Pro Trp Gly Lys Pro Val
130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
165 170 175

Glu Arg Leu Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala
180 185 190

Ala Ala Arg Pro Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
195 200 205

Glu Ala Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe
210 215 220

Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr
225 230 235 240

Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
245 250 255

Ile Lys Asn Ala His Lys Lys Gly Gln
260 265

<210> 13
<211> 663
<212> DNA
<213> Canis familiaris

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atc 663

<210> 14
<211> 221
<212> PRT
<213> Canis familiaris

<400> 14

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Pro Asp Leu Ser Ala Glu Thr Pro Val Leu Pro Gly Asn Gly Asp Glu
20 25 30

Gln Pro Leu Ala Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
35 40 45

Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ala Gly Gln Lys Arg Glu
50 55 60

Glu Glu Glu Val Ala Ala Gly Gly Arg Ala Pro Leu Pro Ala Gly
65 70 75 80

Gly Pro Gly Pro Arg Gly Asp Gly Gly Glu Leu Gly Leu Gln Glu Gly
85 90 95

Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly
100 105 110

Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu
115 120 125

Ser Ala Glu Ala Phe Pro Val Glu Phe Lys Arg Glu Leu Ala Gly Gln
130 135 140

Arg Leu Glu Pro Ala Leu Gly Pro Glu Gly Pro Ala Ala Gly Val Ala
145 150 155 160

Ala Leu Ala Asp Leu Glu Tyr Gly Leu Val Ala Glu Ala Gly Ala Ala
165 170 175

Glu Lys Lys Asp Asp Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly
180 185 190

Ser Pro Pro Lys Asp Lys Arg Tyr Val Gly Phe Met Ser Ser Glu Arg
195 200 205

Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
210 215 220

<210> 15
<211> 771
<212> DNA
<213> Cavia porcellus

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<210> 16
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 <212> PRT
 <213> Cavia porcellus

<400> 16

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															30

Gln	Cys	Gln	Asp	Leu	Thr	Thr	Glu	Arg	His	Leu	Leu	Glu	Cys	Leu	Arg
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Ala	Cys	Lys	Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Gly
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Ala	Asp	Glu	Gln	Thr	Pro	Thr	Glu	Ser	Pro	Arg	Lys	Tyr	Val	Thr	Gly
															80

His	Phe	Arg	Trp	Gly	Arg	Phe	Gly	Arg	Gly	Asn	Ser	Ser	Gly	Ala	Ser
															95

Gln	Lys	Arg	Glu	Glu	Ala	Ala	Ala	Asp	Pro	Gly	Phe	His	Gly		
															110

Asp	Gly	Val	Glu	Pro	Gly	Leu	Arg	Glu	Asp	Lys	Arg	Ser	Tyr	Ser	Met
															125

Glu	His	Phe	Arg	Trp	Gly	Lys	Pro	Val	Gly	Lys	Lys	Arg	Arg	Pro	Val
															140

Lys	Val	Tyr	Ala	Asn	Gly	Ala	Glu	Glu	Ser	Ala	Glu	Ala	Phe	Pro	
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Leu	Glu	Phe	Lys	Arg	Glu	Leu	Thr	Gly	Glu	Arg	Pro	Ala	Ala	Ala	Pro
															175

Gly Pro Asp Gly Leu Gly Phe Gly Leu Val Ala Glu Ala Glu Ala Glu
180 185 190

Ala Ala Ala Ala Glu Lys Lys Asp Ala Ala Glu Lys Lys Asp Asp Gly
195 200 205

Ser Tyr Arg Met Glu His Phe Arg Trp Gly Thr Pro Arg Lys Gly Lys
210 215 220

Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val
225 230 235 240

Thr Leu Phe Lys Asn Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
245 250 255

<210> 17
<211> 714
<212> DNA
<213> Rattus norvegicus

<400> 17
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<211> 235
<212> PRT
<213> Rattus norvegicus

<400> 18

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Gln	Cys	Gln	Asp	Leu	Thr	Thr	Glu	Ser	Asn	Leu	Leu	Ala	Cys	Ile	Arg
35							40					45			
Ala	Cys	Arg	Leu	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Asn
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Gly	Asp	Glu	Gln	Pro	Leu	Thr	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly
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His	Phe	Arg	Trp	Asp	Arg	Phe	Gly	Pro	Arg	Asn	Ser	Ser	Ser	Ala	Gly
						85			90				95		
Gly	Ser	Ala	Gln	Arg	Arg	Ala	Glu	Glu	Glu	Thr	Ala	Gly	Gly	Asp	Gly
						100			105			110			
Arg	Pro	Glu	Pro	Ser	Pro	Arg	Glu	Gly	Lys	Arg	Ser	Tyr	Ser	Met	Glu
						115			120			125			
His	Phe	Arg	Trp	Gly	Lys	Pro	Val	Gly	Lys	Arg	Arg	Pro	Val	Lys	
						130			135			140			
Val	Tyr	Pro	Asn	Val	Ala	Glu	Asn	Glu	Ser	Ala	Glu	Ala	Phe	Pro	Leu
145						150				155			160		
Glu	Phe	Lys	Arg	Glu	Leu	Glu	Gly	Glu	Gln	Pro	Asp	Gly	Leu	Glu	Gln
						165			170			175			
Val	Leu	Glu	Pro	Asp	Thr	Glu	Lys	Ala	Asp	Gly	Pro	Tyr	Arg	Val	Glu
						180			185			190			
His	Phe	Arg	Trp	Gly	Asn	Pro	Pro	Lys	Asp	Lys	Arg	Tyr	Gly	Phe	
						195			200			205			
Met	Thr	Ser	Glu	Lys	Ser	Gln	Thr	Pro	Leu	Val	Thr	Leu	Phe	Lys	Asn
						210			215			220			
Ala	Ile	Ile	Lys	Asn	Val	His	Lys	Lys	Gly	Gln					
						225			230			235			

<210> 19
<211> 708
<212> DNA
<213> Mus musculus

<400> 19
atgccgagat tctgctacag tcgctcaggg gccctgtgc tggccctcct gcttcagacc 60
tccatagatg tgtggagctg gtgcctggag agcagccagt gccaggacct caccacggag 120
agcaacctgc tggcttgcatt cgggcttgc aaactcgacc tctcgcttggaa gacgcccgtg 180
ttccctggca acggagatga acagccccctg actgaaaacc cccggaagta cgtcatgggt 240
cacttccgct gggaccgctt cggccccagg aacagcagca gtgctggcag cgccggcgcag 300
aggcgtgcgg aggaagagggc ggtgtggggaa gatggcagtc cagagccgag tccacgcgag 360
ggcaagcgct cctactccat ggagcacttc cgctggggca agccgggtggg caagaaacgg 420
cgccccggta aggtgtaccc caacgttgct gagaacgagt cggcggagggc ct当地
gagttcaaga gggagcttggaa aggcgagcgg ccatttaggct tggagcaggt cctggagtcc 540
gacgcggaga aggacgacgg gcccattccgg gtggagcact tccgctggag caacccggcc 600
aaggacaaga gttacgggtgg cttcatgacc tccgagaaga gccagacgcc cctgggtgacg 660
ctcttcaaaqa acqccatcat caaqaacqcg cacaqaqaqq qccactqa 708

<210> 20
<211> 235
<212> PRT
<213> *Mus musculus*

<400> 20

Met Pro Arg Phe Cys Tyr Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
1 5 10 15

Leu Leu Gln Thr Ser Ile Asp Val Trp Ser Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Leu Asp Leu Ser Leu Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
85 90 95

Ser Ala Ala Gln Arg Arg Ala Glu Glu Glu Ala Val Trp Gly Asp Gly
100 105 110

Ser Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Arg Pro Leu Gly Leu Glu Gln
165 170 175

Val Leu Glu Ser Asp Ala Glu Lys Asp Asp Gly Pro Tyr Arg Val Glu
180 185 190

His Phe Arg Trp Ser Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
210 215 220

Ala Ile Ile Lys Asn Ala His Lys Lys Gly Gln
225 230 235

<210> 21
<211> 759
<212> DNA
<213> Gallus gallus

<400> 21
atgcggggcg cgctgtgcca cagcctgccc gtggtgctgg ggctgctgct gtgtcacccc 60
accaccgcca gcggcccatg ctgggagaac agcaagtgcc aggacctggc caccgaggct 120
ggtgttttgc aggcgtgtgc caaggcatgc cgtgctgagc tgcggccga ggcacccgtg 180
tacccggca atgggcacct gcagcccctc tcggagagca tccgcaagta cgtgatgagc 240
cattccgct ggaacaagtt cggccgtcgc aacagcagca gcggaggggca caaaagggag 300
gaggtggccg gcctcgccct gcctgcccgc tcaccccaacc accccgcgg ggaggaggaa 360
gatggagaag ggttggaaacg agaggaaggg aagcgctcct actccatgga gcatttccgc 420
tggggcaagc cggtggggcg gaagaggaga cccatcaagg tgtaccccaa cgggggtggac 480
gaggagtcgg ctgagagttt cccatggag ttccggaggg agatggcgcc cgatggggac 540
cccttcggcc tctccgagga ggaggaagaa gaggaggaag aggaaggcga ggaggaaaag 600
aaggatggag gctcgttaccg catgcggcac ttccgctggc acgcgcgcgt gaaggacaag 660

cgctacggcg	gcttcatgag	cttggagcac	agccagaccc	cgctgatgac	tctgttcaaa	720										
aacgccatcg	tcaaaagcgc	ctacaagaag	ggtcagtga			759										
<210> 22																
<211> 251																
<212> PRT																
<213> Gallus gallus																
<400> 22																
Met	Arg	Gly	Ala	Leu	Cys	His	Ser	Leu	Pro	Val	Val	Leu	Gly	Leu	Leu	15
1				5				10								
Leu	Cys	His	Pro	Thr	Thr	Ala	Ser	Gly	Pro	Cys	Trp	Glu	Asn	Ser	Lys	30
				20				25								
Cys	Gln	Asp	Leu	Ala	Thr	Glu	Ala	Gly	Val	Leu	Ala	Cys	Ala	Lys	Ala	45
				35				40								
Cys	Arg	Ala	Glu	Leu	Ser	Ala	Glu	Ala	Pro	Val	Tyr	Pro	Gly	Asn	Gly	60
				50				55								
His	Leu	Gln	Pro	Leu	Ser	Glu	Ser	Ile	Arg	Lys	Tyr	Val	Met	Ser	His	80
				65				70								
Phe	Arg	Trp	Asn	Lys	Phe	Gly	Arg	Arg	Asn	Ser	Ser	Ser	Gly	Gly	His	95
				85				90								
Lys	Arg	Glu	Glu	Val	Ala	Gly	Leu	Ala	Leu	Pro	Ala	Ala	Ser	Pro	His	110
				100				105								
His	Pro	Ala	Gly	Glu	Glu	Asp	Gly	Glu	Gly	Leu	Glu	Arg	Glu	Glu		125
				115				120								
Gly	Lys	Arg	Ser	Tyr	Ser	Met	Glu	His	Phe	Arg	Trp	Gly	Lys	Pro	Val	
				130				135								
Gly	Arg	Lys	Arg	Arg	Pro	Ile	Lys	Val	Tyr	Pro	Asn	Gly	Val	Asp	Glu	160
				145				150								
Glu	Ser	Ala	Glu	Ser	Tyr	Pro	Met	Glu	Phe	Arg	Arg	Glu	Met	Ala	Pro	
				165				170								
Asp	Gly	Asp	Pro	Phe	Gly	Leu	Ser	Glu		190						
				180				185								
Glu	Glu	Gly	Glu	Glu	Lys	Lys	Asp	Gly	Gly	Ser	Tyr	Arg	Met	Arg		

195

200

205

His Phe Arg Trp His Ala Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe
210 215 220

Met Ser Leu Glu His Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn
225 230 235 240

Ala Ile Val Lys Ser Ala Tyr Lys Lys Gly Gln
245 250

<210> 23
<211> 780
<212> DNA
<213> Bufo marinus

<400> 23
atgttgcagc cagggtggag atgtatcctg acaatactcg gggcgtttat atttcattgtc 60
ggtgaggta agagtcagtg ctgggagagc ggtaaatgtg cagatctgac gagcgaggat 120
gggatactgg aatgtattaa agactgcaag atggtcctgt ctgcagagtc accagtgttt 180
cctggaaatg gacacatgca acccctctct gaaaacatca ggaagtatgt catgagccac 240
ttccgctgga ataagttgg ccgaaggaat agcaccggtg gcgatagcaa caacgcaggt 300
tacaaacggg aagatatacg caactacccc atattaacc ttttccccac taatgacaac 360
caaaaacacac aagatggcaa catggaagaa gaactacgca ggcaagacaa caagaggta 420
tattctatgg aacacttccg atggggtaaa ccagtcggga aaaaaaggag acctattaag 480
gttttcccaa gcgatgctga agaagaatca tctgaaatct scccaacaga gtacagaaga 540
gagttgtctg tagagttga ctaccccgat accaactctg aagaagacat ggacgacagc 600
atgttcatgg aaagcccaa tagaaaagat cggaagtata aaatgcatca ttttcgatgg 660
gaaggtccac ccaaagacaa aagatatgga ggattcatga cccctgagcg cagtcagact 720
ccactaatga ctctttcaa aaatgccatt atcaaaaatg cccacaagaa gggtcaataa 780

<210> 24
<211> 259
<212> PRT
<213> Bufo marinus

<220>
<221> misc_feature
<222> (174)..(174)
<223> Xaa can be any naturally occurring amino acid

<400> 24

Met Leu Gln Pro Gly Trp Arg Cys Ile Leu Thr Ile Leu Gly Ala Phe
1 5 10 15

Ile Phe His Val Gly Glu Val Lys Ser Gln Cys Trp Glu Ser Gly Lys
20 25 30

Cys Ala Asp Leu Thr Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Asp
35 40 45

Cys Lys Met Val Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Gly Asp Ser
85 90 95

Asn Asn Ala Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe
100 105 110

Asn Leu Phe Pro Thr Asn Asp Asn Gln Asn Thr Gln Asp Gly Asn Met
115 120 125

Glu Glu Glu Leu Arg Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu
130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Ile Lys
145 150 155 160

Val Phe Pro Ser Asp Ala Glu Glu Ser Ser Glu Ile Xaa Pro Thr
165 170 175

Glu Tyr Arg Arg Glu Leu Ser Val Glu Phe Asp Tyr Pro Asp Thr Asn
180 185 190

Ser Glu Glu Asp Met Asp Asp Ser Met Leu Met Glu Ser Pro Asn Arg
195 200 205

Lys Asp Arg Lys Tyr Lys Met His His Phe Arg Trp Glu Gly Pro Pro
210 215 220

Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
225 230 235 240

Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys

245

250

255

Lys Gly Gln

<210> 25
<211> 669
<212> DNA
<213> Cyprinus carpio

<400> 25
atggtgaggg gagagaggat gttgtgtcct gcttggctct tggctctggc tggctgtgt 60
gcggctggat ctgaagtcaag agctcagtgt atggaggacg cccgctgcag agacacctacc 120
actgatgaga acatcttggc ctgcatacag ctatgcaggt ctgatctgac agatgaaacc 180
cccgtctacc ctggagaaaag ccatttgcag cctccctctg agctggagca aaccgaggc 240
ctcgtaaaaa ttgtccccagc ggccctcgct cctgctgagc aaatggaccc cgagtccagc 300
cctcagcacg agcacaagcg ctcctactcc atggagcatt tccgctgggg aaagccagtg 360
ggtcgcaagc gcaggcctat caaggtgtac accaacggcg tggaggagga atccaccgag 420
actctccag ctgagatgag gcgcgagctg gctacaaacg agatcgacta tcctcaagag 480
gagggcgctt taaaccagca ggataagaag gatggctcct aaaaaatgag ccatttccgc 540
tggagcagcc cgcctgctag caagcgctat ggaggctca tgaagtccctg ggacgagcgc 600
agtcagaaac cccttctcac gctttcaaa aacgtcataa acaaagagca ccagaagaag 660
gaccagtga 669.

<210> 26
<211> 222
<212> PRT
<213> Cyprinus carpio

<400> 26

Met Val Arg Gly Glu Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
1 5 10 15

Ala Val Leu Cys Ala Ala Gly Ser Glu Val Arg Ala Gln Cys Met Glu
20 25 30

Asp Ala Arg Cys Arg Asp Leu Thr Thr Asp Glu Asn Ile Leu Asp Cys
35 40 45

Ile Gln Leu Cys Arg Ser Asp Leu Thr Asp Glu Thr Pro Val Tyr Pro
50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Leu Glu Gln Thr Glu Val
65 70 75 80

Leu Val Pro Leu Ser Pro Ala Ala Leu Ala Pro Ala Glu Gln Met Asp
85 90 95

Pro Glu Ser Ser Pro Gln His Glu His Lys Arg Ser Tyr Ser Met Glu
100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Ser Thr Glu Thr Leu Pro Ala
130 135 140

Glu Met Arg Arg Glu Leu Ala Thr Asn Glu Ile Asp Tyr Pro Gln Glu
145 150 155 160

Glu Gly Ala Leu Asn Gln Gln Asp Lys Lys Asp Gly Ser Tyr Lys Met
165 170 175

Ser His Phe Arg Trp Ser Ser Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ser Gln Lys Pro Leu Leu Thr Leu
195 200 205

Phe Lys Asn Val Ile Asn Lys Glu His Gln Lys Lys Asp Gln
210 215 220

<210> 27
<211> 669
<212> DNA
<213> Danio rerio

<400> 27
atggtgaggg gagtgaggat gttgtgtcct gcttggctct tggctctggc tgttctctgc 60
gcaggaggat ctgaagtcag agctcagtgt tggaaaaatg cccgctgtcg agacacctcagc
acagaggaga acatcttggaa atgcatacaa ttatgcaggt ctgaacttac agatgaaacc 120
cccgcttacc ctggagaaaag ccatctacag cctccctccg agccggagca aatcgacctc
ctcgcacacc tttcccctgt agcaactcgca gcccctgaac agatagagcc ggagtccggc 180
cctcgcacacg accacaagcg ctcctactcc atggaacact tccgggtgggg caaacccggtc
ggccgcaaac gcagacccat caaggtgtac acgaacggcg tggaaagagga atccgcccga 240
acgcttccgg aagagatgag acgcgagctg gcaaataacg aggtcgacta tccgcaagaa 300
360
420
480

gagatgcctt taaaccact gggaaagaag gaccccccct acaaaaatgac ccatttccgc 540
tggagcgtcc cgccggctag caagcgctat ggaggcttca tgaagtccctg ggacgagcgt 600
gctcagaaac cactgctcac actcttcaaa aacgtaatgc ataaaggcca accgaggaag 660
gatgagtga 669

<210> 28
<211> 222
<212> PRT
<213> Danio rerio

<400> 28

Met Val Arg Gly Val Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
1 5 10 15

Ala Val Leu Cys Ala Gly Gly Ser Glu Val Arg Ala Gln Cys Trp Glu
20 25 30

Asn Ala Arg Cys Arg Asp Leu Ser Thr Glu Glu Asn Ile Leu Glu Cys
35 40 45

Ile Gln Leu Cys Arg Ser Glu Leu Thr Asp Glu Thr Pro Val Tyr Pro
50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Pro Glu Gln Ile Asp Leu
65 70 75 80

Leu Ala His Leu Ser Pro Val Ala Leu Ala Ala Pro Glu Gln Ile Glu
85 90 95

Pro Glu Ser Gly Pro Arg His Asp His Lys Arg Ser Tyr Ser Met Glu
100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Ser Ala Glu Thr Leu Pro Glu
130 135 140

Glu Met Arg Arg Glu Leu Ala Asn Asn Glu Val Asp Tyr Pro Gln Glu
145 150 155 160

Glu Met Pro Leu Asn Pro Leu Gly Lys Lys Asp Pro Pro Tyr Lys Met
165 170 175

Thr His Phe Arg Trp Ser Val Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ala Gln Lys Pro Leu Leu Thr Leu
195 200 205

Phe Lys Asn Val Met His Lys Gly Gln Pro Arg Lys Asp Glu
210 215 220

<210> 29

<211> 792

<212> DNA

<213> Rana catesbeiana

<400> 29

atgttgcagc cagtctggca cgccctgtatc ctggcaatac ttgggggtgtt catatttcatt 60

gtcggagagg tccggagcca gtgctggaa agcaataagt gtacagattt aagcagcgaa 120

gatggcattc tggaatgtat caaagcatgc aagatggacc tctctgcaga atctcccgta 180

tttccggca atggccacat ccagcccctt tctgaaaaca tcagggaaata tgtcatgagc 240

cactttcgct ggaataaaatt tggtagaagg aacagcacca gcaatgacaa caacaacaac 300

aatggtggtt ataagcggga ggatattgcc aactacccta tattgaacct gttccttggc 360

agcgacaacc aaaacacaca ggaggaaatt atggaaagatg acgccttggta taggcaagac 420

agcaaaaaggcttattccat ggagcacttc cgatggggaa aacccgtcgg caagaagagg 480

aggcctatca aagtttccc cacagatgtt gaagaagagt cctcagaaag tttccccatt 540

gagctgagaa gagagctctc tctagagttt gactatcctg acaccaactc cgaagaagaa 600

ttggataatg gcgagctgct agaaggtcca gttaaaaaag gtaggaagta caaaatgcac 660

catttccat gggaggacc tcccaaagac aagcggtatg gtggatttat gacccagag 720

agaagccaga caccttaat gacttttc aagaatgcta taattaagaa cgcccacaaa 780

aaggccagt ag 792

<210> 30

<211> 263

<212> PRT

<213> Rana catesbeiana

<400> 30

Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
1 5 10 15

Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
20 25 30

Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
85 90 95

Asn Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr
100 105 110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Glu Ser Ser Glu
165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
180 185 190

Pro Asp Thr Asn Ser Glu Glu Glu Leu Asp Asn Gln Glu Leu Leu Glu
195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 31
<211> 272
<212> PRT
<213> Monodelphis domestica

<400> 31

Met Pro Lys Pro Ser Trp Ser Tyr Leu Gly Ala Leu Leu Val Ala Val
1 5 10 15

Leu Phe Gln Ala Ser Val Glu Val His Gly Trp Cys Leu Gln Ala Ser
20 25 30

Asn Cys Arg Asp Ser Lys Ala Glu Asp Gly Leu Val Glu Cys Ile Lys
35 40 45

Ser Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly Gln Tyr Glu Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ile Ser Ser Gly Ser
85 90 95

Ile Ser Ser Asp Gly Gly Asn Val Gly Gln Lys Arg Gln Glu Leu Met
100 105 110

Gln Gly Asp Phe Leu Asp Leu Pro Pro Pro Gly Val Trp Gly Glu Asp
115 120 125

Glu Glu Met Gln Glu Gly Leu Pro Leu Ile Arg Lys Ala Arg Glu Leu
130 135 140

Gln Asn Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
145 150 155 160

Val Gly Lys Lys Arg Arg Pro Val Lys Ile Tyr Pro Asn Gly Val Glu
165 170 175

Glu Glu Ser Ala Glu Ser Tyr Pro Val Glu Ile Arg Arg Asp Leu Pro
180 185 190

Met Lys Ile Asn Phe Pro Glu Tyr Pro Glu Leu Ala Ile Asp Glu Glu
195 200 205

Glu Ala Ala Lys Glu Val Tyr Glu Glu Lys Val Lys Lys Asp Gly Gly
210 215 220

Gly Tyr Lys Met Glu His Phe Arg Trp Gly Thr Pro Pro Lys Asp Lys
225 230 235 240

Arg Tyr Gly Gly Phe Met Ile Ser Glu Lys Ser His Thr Pro Leu Met
245 250 255

Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Gly His Lys Lys Gly Gln
260 265 270

<210> 32
<211> 263
<212> PRT
<213> Ovis aries

<220>
<221> misc_feature
<222> (184)..(184)
<223> Xaa can be any naturally occurring amino acid

<400> 32

Met Pro Arg Leu Cys Ser Ser Arg Ser Gly Ala Leu Leu Leu Val Leu
1 5 10 15

Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe
85 90 95

Gly Ala Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu
115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
165 170 175

Glu Arg Leu Glu Gln Ala Arg Xaa Pro Glu Ala Gln Ala Glu Ser Ala
180 185 190

Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
195 200 205

Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp
210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu
225 230 235 240

Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 33
<211> 212
<212> PRT
<213> Ovis aries

<220>
<221> misc_feature
<222> (120)..(121)
<223> Xaa can be any naturally occurring amino acid

<400> 33

Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn Cys Asp Glu
1 5 10 15

Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
20 25 30

Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe Gly Ala Gly
35 40 45

Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly Glu Gly Pro
50 55 60

Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu Asp Lys Arg
 65 70 75 80

 Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys
 85 90 95

 Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala
 100 105 110

 Gln Ala Phe Pro Leu Glu Phe Xaa Xaa Glu Leu Thr Gly Glu Arg Leu
 115 120 125

 Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala Ala Ala Arg
 130 135 140

 Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala Ala Glu Lys
 145 150 155 160

 Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly Ser Pro
 165 170 175

 Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln
 180 185 190

 Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His
 195 200 205

 Lys Lys Gly Gln
 210

 <210> 34
 <211> 263
 <212> PRT
 <213> Rana catesbeiana

 <400> 34

 Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
 1 5 10 15

 Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
 20 25 30

 Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
 35 40 45

Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
85 90 95

Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr
100 105 110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Ser Ser Glu
165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
180 185 190

Pro Asp Thr Asn Ser Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

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<211> 258
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<400> 35

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1 5 10 15

Val Phe His Val Gly Glu Val Arg Gly Gln Cys Trp Gln Ser Ala Lys
20 25 30

Cys Met Asp Leu Glu Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Ile Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ala Glu Asn Val Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Thr Thr Gly Asn Glu Gly
85 90 95

Asn Ser Gly Ser Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe Asn
100 105 110

Leu Phe Pro Ser Ser Asn Gly Gln Asn Thr Glu Asp Asn Met Trp Lys
115 120 125

Lys Tyr Gln Asp Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Phe Pro Asn Gly Met Glu Glu Ser Ser Glu Ser Tyr Pro Met Glu
165 170 175

Leu Arg Arg Glu Leu Ser Leu Glu Asp Asp Tyr Pro Glu Ile Asp Ser
180 185 190

Glu Asp Asp Leu Asp Tyr Asn Asp Leu Leu Ser Met Pro Lys Phe Lys
195 200 205

Gly Gly Asp Tyr Arg Ile His His Phe Arg Trp Gly Ser Pro Pro Lys
210 215 220

Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr Pro
225 230 235 240

Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys Lys
245 250 255

Ala Gln

<210> 36
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<213> Xenopus laevis

<400> 36

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1 5 10 15

Ile Phe His Ile Gly Glu Val Gln Ser Gln Cys Trp Glu Ser Ser Arg
20 25 30

Cys Ala Asp Leu Ser Ser Glu Asp Gly Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ser Glu Ser Ile Arg Lys Tyr Val Met Thr His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Asn Asp Gly
85 90 95

Ser Asn Thr Gly Tyr Lys Arg Glu Asp Ile Ser Ser Tyr Pro Val Phe
100 105 110

Ser Leu Phe Pro Leu Ser Asp Gln Asn Ala Pro Gly Asp Asn Met Glu
115 120 125

Glu Glu Pro Leu Asp Arg Gln Glu Asn Lys Arg Ala Tyr Ser Met Glu
130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
145 150 155 160

Val Tyr Pro Asn Gly Val Glu Glu Ser Ala Glu Ser Tyr Pro Met
165 170 175

Glu Leu Arg Arg Glu Leu Ser Leu Glu Leu Asp Tyr Pro Glu Ile Asp

180 185 190

Leu Asp Glu Asp Ile Glu Asp Asn Glu Val Lys Ser Ala Leu Thr Lys
195 200 205

Lys Asn Gly Asn Tyr Arg Met His His Phe Arg Trp Gly Ser Pro Pro
210 215 220

Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
225 230 235 240

Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ser His Lys
245 250 255

Lys Gly Gln

<210> 37
<211> 262
<212> PRT
<213> Necturus maculosus

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<400> 37

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Leu Cys Gln Thr Val Val Ala His Ser Gln Cys Trp Glu Ser Ser Lys
20 25 30

Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Gln Phe Gly Arg Lys Asn Ser Thr Val Ala Ser Gly
85 90 95

Asn Gly Ala Gly Ser Lys Arg Glu Glu Leu Ser Gly Asn Pro Ile Ile

100 105 110

Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala His Asp Ser
115 120 125

Xaa Lys Glu Gly Glu Val Met Asp Arg Gln Asp Asn Lys Arg Ser Tyr
130 135 140

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg
145 150 155 160

Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Ser Ser Glu Ser
165 170 175

Tyr Pro Leu Glu Leu Lys Arg Asp Leu Ser Leu Gly Leu Glu Tyr Pro
180 185 190

Glu Phe Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Val Met Val Val
195 200 205

Leu Pro Glu Lys Lys Asp Gly Asn Tyr Arg Met His His Phe Arg Trp
210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn
245 250 255

Ala His Lys Lys Gly Gln
260

<210> 38
<211> 262
<212> PRT
<213> Amphiuma means

<400> 38

Met Leu Arg Pro Val Trp Ser Cys Leu Pro Ala Thr Leu Gly Ala Leu
1 5 10 15

Leu Cys Gln Thr Ala Gly Ala Asn Ser Gln Cys Trp Glu Ser Ser Lys
20 25 30

Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys	Lys	Val	Glu	Leu	Ser	Ala	Glu	Ser	Pro	Val	Tyr	Pro	Gly	Asn	Gly
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His	Met	Gln	Pro	Leu	Ser	Glu	Asn	Ile	Arg	Lys	Tyr	Val	Met	Ser	His
65						70				75				80	
Phe	Arg	Trp	Asn	Lys	Phe	Gly	Arg	Lys	Asn	Ser	Thr	Ser	Val	Ser	Gly
					85				90					95	
Asn	Ser	Ala	Gly	Asn	Lys	Arg	Glu	Glu	Leu	Ser	Asn	Asn	Pro	Ile	Ile
					100				105				110		
Ser	Leu	Phe	Thr	Thr	Ser	Glu	Ser	Ser	Gly	Ala	Asp	Asp	Gly		
					115				120			125			
Asn	Lys	Glu	Gly	Glu	Ala	Met	Glu	Arg	Gln	Asp	Ser	Lys	Arg	Ser	Tyr
					130				135			140			
Ser	Met	Glu	His	Phe	Arg	Trp	Gly	Lys	Pro	Val	Gly	Arg	Lys	Arg	Arg
					145				150			155			160
Pro	Ile	Lys	Val	Tyr	Pro	Asn	Gly	Val	Glu	Glu	Ser	Ser	Glu	Ser	
					165				170			175			
Tyr	Pro	Leu	Glu	Leu	Arg	Arg	Asp	Leu	Ser	Leu	Gly	Leu	Asp	Tyr	Pro
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Asp	Ser	Asp	Ser	Gln	Glu	Gly	Leu	Glu	Asn	Asn	Glu	Ile	Thr	Thr	Gly
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Leu	Thr	Lys	Lys	Asn	Asp	Lys	Gln	Tyr	Arg	Ile	Gly	His	Phe	Arg	Trp
					210				215			220			
Gly	Ser	Pro	Leu	Lys	Asp	Lys	Arg	Tyr	Gly	Gly	Phe	Met	Thr	Pro	Glu
					225				230			235			240
Arg	Ser	Gln	Thr	Pro	Leu	Met	Thr	Leu	Phe	Lys	Asn	Ala	Ile	Lys	Asn
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Ala	His	Lys	Lys	Gly	Gln										
					260										

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<211> 261
<212> PRT
<213> Pelodiscus sinensis

<400> 39

Met Leu Lys Pro Val Arg Ser Gly Leu Leu Ala Ile Leu Gly Val Leu
1 5 10 15

Leu Phe His Ala Asp Gly Gly Val His Ser Gln Cys Trp Asp Ser Ser
20 25 30

Arg Cys Arg Glu Leu Ser Thr Asp Ala Gly Leu Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Asp Glu Ser Pro Met Tyr Pro Gly Asn
50 55 60

Gly His Leu Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Ser Ser Val
85 90 95

Ala Gly His Lys Arg Glu Glu Ile Pro Ser His Leu Leu Leu Gly Leu
100 105 110

Phe Pro Asp Val Ala Pro Ala Gln Arg Gly Asp Asp Gly Glu Gly Gly
115 120 125

Ala Ala Leu Glu Arg Gln Asp Ser Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Tyr Pro Ser Glu Val Glu Glu Ser Ala Glu Ser Tyr Pro Pro Glu
165 170 175

Phe Arg Arg Asp Leu Ser Met Glu Leu Asp Tyr Pro Glu Phe Glu Ser
180 185 190

Leu Glu Asp Pro Glu Ser Glu Glu Ala Leu Val Ser Glu Glu Ala Glu
195 200 205

Lys Lys Asp Gly Asn Ser Tyr Lys Met His His Phe Arg Trp Asn Ala
210 215 220

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Ser Ser
225 230 235 240

Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala
245 250 255

Tyr Lys Lys Gly Gln
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<210> 40
<211> 187
<212> PRT
<213> Pan troglodytes

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Ser Ala Glu Thr Pro Met Phe Pro Gly Asn Gly Asp Glu Gln Pro Leu
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Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
20 25 30

Phe Gly Arg Arg Asn Ser Ser Ser Ser Ser Gly Ser Gly Ala Gly
35 40 45

Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro
50 55 60

Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg
65 70 75 80

Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
85 90 95

Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu
100 105 110

Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr
115 120 125

Gly Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp
130 135 140

Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala
145 150 155 160

Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg Trp Gly
165 170 175

Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

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<213> Artificial

<220>
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<212> DNA
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<210> 43
<211> 22
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SEQUENCE LISTING

<101> SCARPACE, PHILIP J.
LI, GANG

<120> RAAV VECTOR-BASED PRO-OPIOMELANOCORTIN COMPOSITIONS AND METHODS OF USE

<130> 4300.015400

<150> 60/462,496
<151> 2003-04-11

<160> 54

<170> PatentIn version 3.2

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tacaggatgg agcaacttccg ctggggcagc ccggccaaagg acaagcgcta cggcggtttc 720
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<212> PRT
<213> Homo sapiens

<400> 2

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20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Met Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser Ser Gly
85 90 95

Ser Ser Gly Ala Gly Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp
100 105 110

Cys Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala
115 120 125

Lys Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe
130 135 140

Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr
145 150 155 160

Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe
165 170 175

Lys Arg Glu Leu Thr Gly Gln Arg Leu Arg Glu Gly Asp Gly Pro Asp
180 185 190

Gly Pro Ala Asp Asp Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser
195 200 205

Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu
210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
245 250 255

Ala Ile Ile Lys Asn Ala Tyr Lys Lys Gly Glu
260 265

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<212> DNA
<213> Gorilla gorilla

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cagcagcggc agcggcgcag ggcagaagcg cgaggatgtc tcagcgggca aagaccgcgg 180
cccgctgcct gagggcggcc ccgagccccg cagtgtatggt gccaagccgg gcccgcgcga 240
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gcgcccggtg aaggtgtacc ctaacggcgc cgaggacgag tcggccgagg cttccccct 360
ggagttcaag agggagctga ctggccagcg accccgggag ggagatggcc ccgacggccc 420
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<213> Gorilla gorilla

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Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
20 25 30

Phe Gly Arg Arg Asn Ser Ser Ser Ser Gly Ser Gly Ala Gly Gln
35 40 45

Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu
50 55 60

Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg Glu
65 70 75 80

Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
85 90 95

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
100 105 110

Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
115 120 125

Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly
130 135 140

Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala Glu
145 150 155 160

Lys Lys Asp Glu Gly Pro Tyr Gly Met Glu His Phe Arg Trp Gly Ser
165 170 175

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

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<212> DNA
<213> Macaca nemestrina

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cgcgaggacg tcgcggctgg cgaagaccgc ggcctgctac ctgagggtgg ccccgagccc 360
cgtggcgatg gcgccggccgc gggcccgccgc gagggcaagc gctcctactc catggagcac 420

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gccgaggacg	agtcccgg	ggcctcccc	ctggagttca	agagggagct	gaccggccag	540
cggccccgg	cggggatgg	ccccgatggc	cctgcccacg	acggcgccgg	gccccggcc	600
gacctggagc	acagcctgct	ggtggcggcc	gagaagaagg	atgagggccc	ctacaggatg	660
gagcacttcc	gctggggcag	cccgcccaag	gacaagcgct	acggcggctt	catgacctcc	720
gagaagagcc	agactcccct	ggtgacactg	ttcaaaaacg	ccatcatcaa	gaacgcctac	780
aagaagggccc	agtga					795

<210> 6
<211> 264
<212> PRT
<213> Macaca nemestrina

<400> 6

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					20			25				30			

Gln	Cys	Gln	Asp	Leu	Thr	Thr	Glu	Ser	Asn	Leu	Leu	Glu	Cys	Ile	Arg
						35		40				45			

Ala	Cys	Lys	Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Asn
					50			55			60				

Gly	Asp	Glu	Gln	Pro	Leu	Thr	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly
					65		70		75			80			

His	Phe	Arg	Trp	Asp	Arg	Phe	Gly	Arg	Arg	Asn	Ser	Ser	Ser	Gly	Ser
						85		90			95				

Ala	His	Gln	Lys	Arg	Glu	Asp	Val	Ala	Ala	Gly	Glu	Asp	Arg	Gly	Leu
						100			105			110			

Leu	Pro	Glu	Gly	Gly	Pro	Glu	Pro	Arg	Gly	Asp	Gly	Ala	Gly	Pro	Gly
						115		120			125				

Pro	Arg	Glu	Gly	Lys	Arg	Ser	Tyr	Ser	Met	Glu	His	Phe	Arg	Trp	Gly
						130		135			140				

Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly
145 150 155 160

Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu
165 170 175

Leu Thr Gly Gln Arg Pro Arg Ala Gly Asp Gly Pro Asp Gly Pro Ala
180 185 190

Asp Asp Gly Ala Gly Pro Arg Ala Asp Leu Glu His Ser Leu Leu Val
195 200 205

Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg
210 215 220

Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser
225 230 235 240

Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile
245 250 255

Lys Asn Ala Tyr Lys Lys Gly Gln
260

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<212> DNA
<213> Pongo pygmaeus

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actgcctgag ggcggccccc agcccccgcag cgatggcgcc gagccgggccc cgcgcgagg 180
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gttcaagagg gagccgaccg gccagcggct ccggggaggga gatggccccc acggccctgc 360
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<212> PRT
<213> Pongo pygmaeus

<400> 8

Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn
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20 25 30

Ala Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu Gly Pro Glu Pro
35 40 45

Arg Ser Asp Gly Ala Glu Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr
50 55 60

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg
65 70 75 80

Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala
85 90 95

Phe Pro Leu Glu Phe Lys Arg Glu Pro Thr Gly Gln Arg Leu Arg Glu
100 105 110

Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly Ala Gly Ala Arg Ala
115 120 125

Asp Leu Glu His Asn Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly
130 135 140

Pro Tyr Arg Met Glu His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys
145 150 155 160

Arg Tyr Gly Gly Phe
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<212> DNA
<213> Sus scrofa

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cacttccgct	gggaccgctt	cggccgcccgg	aatggcagca	gcagcggcgg	cggtggcggt	300
ggcggcggcg	cggggccagaa	gcgcgaggag	gaggaggtgg	cggcggggcga	aggccccggg	360
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cacttccgct	ggggcaagcc	cgtggcaag	aagcggcgcc	cggtaaggt	gtatccaaac	480
ggcgcggagg	acgagttggc	cgaggccttc	cccctcgagt	tcaggaggga	gctggccggg	540
gcgcgggggg	agccggcacg	ggaccccgag	gccccggccg	agggcgcggc	cgccccggcc	600
gagctggagt	acgggctggt	ggccgaggcc	gaggcggccg	agaagaagga	cgaaggggccc	660
tataagatgg	agcacttccg	ctggggcagc	ccgccccaaagg	acaagcgcta	cggcggcttc	720
atgacctccg	agaagagcca	gacgccccctg	gtcacgctgt	tcaaaaacgc	catcgtaag	780
aacgcccaca	agaaggcca	gtga				804

<210>	10
<211>	267
<212>	PRT
<213>	Sus scroffa

<400> 10

Met	Pro	Arg	Leu	Cys	Gly	Ser	Arg	Ser	Gly	Ala	Leu	Leu	Leu	Thr	Leu
1				5				10					15		

Leu	Leu	Gln	Ala	Ser	Met	Gly	Val	Arg	Gly	Trp	Cys	Leu	Glu	Ser	Ser
				20				25				30			

Gln	Cys	Gln	Asp	Leu	Ser	Thr	Glu	Ser	Asn	Leu	Leu	Ala	Cys	Ile	Arg
					35			40				45			

Ala	Cys	Lys	Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Asn
				50				55			60				

Gly	Asp	Ala	Gln	Pro	Leu	Thr	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly
					65			70			75			80	

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Gly
85 90 95

Gly Gly Gly Gly Gly Gly Ala Gly Gln Lys Arg Glu Glu Glu Glu
100 105 110

Val Ala Ala Gly Glu Gly Pro Gly Pro Arg Gly Asp Gly Val Ala Pro
115 120 125

Gly Pro Arg Gln Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp
130 135 140

Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn
145 150 155 160

Gly Ala Glu Asp Glu Leu Ala Glu Ala Phe Pro Leu Glu Phe Arg Arg
165 170 175

Glu Leu Ala Gly Ala Pro Pro Glu Pro Ala Arg Asp Pro Glu Ala Pro
180 185 190

Ala Glu Gly Ala Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala
195 200 205

Glu Ala Glu Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Lys Met Glu
210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
245 250 255

Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
260 265

<210> 11
<211> 798
<212> DNA
<213> Bos taurus

<400> 11
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agtaacctgc	tggcgtgcat	ccgggcctgc	aagcccggacc	tctccgcccga	gacgcccggtg	180
ttccccggca	acggcgatga	gcagccgctg	actgagaacc	cccggaaagta	cgtcatgggc	240
catttccgct	gggaccgctt	cggccgtcgg	aatggtagca	gcagcagcgg	agttgggggc	300
gcggcccaga	agcgcgagga	ggaagtggcg	gtgggcgaag	gccccgggcc	ccgcccgcgt	360
gacgcccaga	cgggtccgcg	cgaggacaag	cgttcttact	ccatggaaaca	cttcccctgg	420
ggcaagccgg	tggcaagaa	gcggcgccccg	gtgaagggtgt	accccaacgg	cgccgaggac	480
gagtcggccc	aggccttcc	cctcgaattc	aagagggagc	tgaccgggga	gaggctcgag	540
caggcgcgcg	gccccgaggc	ccaggctgag	agtgcggccg	cccggcctga	gctggagtat	600
ggcctggtgg	cggaggcgga	ggctgaggcg	gccgagaaga	aggactcggg	gccctataag	660
atggAACACT	tccgctgggg	cagcccggcc	aaggacaagc	gctacggcgg	gttcatgacc	720
tccgagaaga	gccaaacgcc	cttgtcacg	ctgttcaaaa	acgccatcat	caagaacgcc	780
cacaagaagg	gccagtga					798

<210> 12
 <211> 265
 <212> PRT
 <213> Bos taurus

<400> 12

Met	Pro	Arg	Leu	Cys	Ser	Ser	Arg	Ser	Ala	Ala	Leu	Leu	Leu	Ala	Leu
1				5					10					15	

Leu	Leu	Gln	Ala	Ser	Met	Glu	Val	Arg	Gly	Trp	Cys	Leu	Glu	Ser	Ser
					20			25				30			

Gln	Cys	Gln	Asp	Leu	Thr	Thr	Glu	Ser	Asn	Leu	Leu	Ala	Cys	Ile	Arg
					35			40				45			

Ala	Cys	Lys	Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Asn
					50			55			60				

Gly	Asp	Glu	Gln	Pro	Leu	Thr	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly
					65			70			75		80		

His	Phe	Arg	Trp	Asp	Arg	Phe	Gly	Arg	Arg	Asn	Gly	Ser	Ser	Ser	Ser
						85			90			95			

Gly Val Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Asp Ala Glu Thr Gly Pro Arg Glu
115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Pro Trp Gly Lys Pro Val
130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
165 170 175

Glu Arg Leu Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala
180 185 190

Ala Ala Arg Pro Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
195 200 205

Glu Ala Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe
210 215 220

Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Phe Met Thr
225 230 235 240

Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
245 250 255

Ile Lys Asn Ala His Lys Lys Gly Gln
260 265

<210> 13
<211> 663
<212> DNA
<213> Canis familiaris

<400> 13
gacctcacca cggaaagtaa cctgctggcg tgcacatccggg cctgcaagcc cgacacctcc 60
gccgagacgc ccgtgctccc cggcaacggc gacgagcagc cgctggctga gaaccgggg 120
aagtacgtca tgggccactt ccgctggac cggtttggcc gccgcaatgg cagcgcgggc 180

cagaagcgcg	aggaagaaga	ggtggcggcg	ggcggaggcc	gcgcggcgct	gcccgcgggc	240
ggcccggggc	cccgcgccga	cggtggcgag	ctcggcctgc	aagagggcaa	gcgctcctac	300
tccatggagc	acttccgctg	ggcaagccg	gtggcaaga	agcggcgccc	ggtgaaggtg	360
taccccaacg	gcgctgagga	cgagtcggcc	gaggccttcc	ccgtcgagtt	caagagggag	420
ctggccgggc	agcggctgga	gccggcgctc	ggccccgagg	gcccgccgc	gggcgtggcg	480
gcgcgtggccg	acctggagta	cggcctggtg	gcggaggccg	gggcggccga	gaagaaggac	540
gacggggccct	acaagatgga	gcacttccgc	tggggcagcc	cgcccaagga	caagcgctac	600
gtcggcttca	tgagctcgga	gaggagccag	acgcccctgg	tgacgctgtt	aaaaaacgcc	660
atc						663

<210> 14
<211> 221
<212> PRT
<213> Canis familiaris

<400> 14

Asp	Leu	Thr	Thr	Glu	Ser	Asn	Leu	Leu	Ala	Cys	Ile	Arg	Ala	Cys	Lys
1				5				10						15	

Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Leu	Pro	Gly	Asn	Gly	Asp	Glu
	20				25						30				

Gln	Pro	Leu	Ala	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly	His	Phe	Arg
	35				40						45				

Trp	Asp	Arg	Phe	Gly	Arg	Arg	Asn	Gly	Ser	Ala	Gly	Gln	Lys	Arg	Glu
	50				55					60					

Glu	Glu	Glu	Val	Ala	Ala	Gly	Gly	Gly	Arg	Ala	Pro	Leu	Pro	Ala	Gly
65				70				75			80				

Gly	Pro	Gly	Pro	Arg	Gly	Asp	Gly	Gly	Glu	Leu	Gly	Leu	Gln	Glu	Gly
	85					90					95				

Lys	Arg	Ser	Tyr	Ser	Met	Glu	His	Phe	Arg	Trp	Gly	Lys	Pro	Val	Gly
	100				105						110				

Lys	Lys	Arg	Arg	Pro	Val	Lys	Val	Tyr	Pro	Asn	Gly	Ala	Glu	Asp	Glu
	115				120						125				

Ser Ala Glu Ala Phe Pro Val Glu Phe Lys Arg Glu Leu Ala Gly Gln
130 135 140

Arg Leu Glu Pro Ala Leu Gly Pro Glu Gly Pro Ala Ala Gly Val Ala
145 150 155 160

Ala Leu Ala Asp Leu Glu Tyr Gly Leu Val Ala Glu Ala Gly Ala Ala
165 170 175

Glu Lys Lys Asp Asp Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly
180 185 190

Ser Pro Pro Lys Asp Lys Arg Tyr Val Gly Phe Met Ser Ser Glu Arg
195 200 205

Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
210 215 220

<210> 15
<211> 771
<212> DNA
<213> Cavia porcellus

<400> 15
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tccatggaag tgcggggctg gtgcctggag agcagccagt gtcaggacct caccacggag 120
agacacctgc tggagtgcct ccgggcctgc aaaccggacc tctcggccga gacgccagtg 180
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gaggacaagc gctcctactc catggagcac ttccgctggg gcaagccgg 420
cgccgccccgg tgaaggtgta cgcaacggc gcggaggagg agtcggccga ggcctttccg 480
ctttagttca agcggggagct gaccggggag cggccgcgg cggcgccccgg ccccgacggc 540
ctggggttcg gcctggtgcc tgaggccgag gccgaggcgg cagcggccga gaagaaggac 600
gcggccgaga agaaggacga cgggtcctat cgcatggagc acttccgctg gggcaccccg 660
cgcaaggggca agcgctacgg cggcttcatg acctcggaga agagccagac gccgctgg 720
acgctgttca agaacgccat cgtcaagaac gcccacaaga agggccagtg a 771

<210> 16
<211> 256
<212> PRT
<213> Cavia porcellus

<400> 16

Met Pro Arg Ser Cys Tyr Ser Arg Ser Gly Thr Leu Leu Leu Ala Leu
1 5 10 15

Leu Leu Gln Ile Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Arg His Leu Leu Glu Cys Leu Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Gly
50 55 60

Ala Asp Glu Gln Thr Pro Thr Glu Ser Pro Arg Lys Tyr Val Thr Gly
65 70 75 80

His Phe Arg Trp Gly Arg Phe Gly Arg Gly Asn Ser Ser Gly Ala Ser
85 90 95

Gln Lys Arg Glu Glu Ala Ala Ala Asp Pro Gly Phe His Gly
100 105 110

Asp Gly Val Glu Pro Gly Leu Arg Glu Asp Lys Arg Ser Tyr Ser Met
115 120 125

Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val
130 135 140

Lys Val Tyr Ala Asn Gly Ala Glu Glu Ser Ala Glu Ala Phe Pro
145 150 155 160

Leu Glu Phe Lys Arg Glu Leu Thr Gly Glu Arg Pro Ala Ala Ala Pro
165 170 175

Gly Pro Asp Gly Leu Gly Phe Gly Leu Val Ala Glu Ala Glu Ala Glu
180 185 190

Ala Ala Ala Ala Glu Lys Lys Asp Ala Ala Glu Lys Lys Asp Asp Gly

195

200

205

Ser Tyr Arg Met Glu His Phe Arg Trp Gly Thr Pro Arg Lys Gly Lys
210 215 220

Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val
225 230 235 240

Thr Leu Phe Lys Asn Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
245 250 255

<210> 17
<211> 714
<212> DNA
<213> Rattus norvegicus

<400> 17
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agcaacctgc tggcttgcatt cccggcctgc agactcgacc tctcggcggaa gacgcccgtg 180
tttccaggca acggagatga acagcccttg actgaaaatc cccggaagta cgtcatgggt 240
cacttccgct gggaccgctt cggcccgaga aacagcagca gtgctggcgg ctcagcgcag 300
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cgccctgtga aggtgtaccc caatgtcgcc gagaacgagt cggccgaggc ctttcccccta 480
gagttcaaga gggagctgga aggcgagcag cctgatggct tggagcacgt cctggagccg 540
gataccgaga aggccgacgg gccctatcgg gtggagcact tccgctgggg caacccgccc 600
aaggacaagc gctacggcgg cttcatgacc tccgagaaga gccagacgcc cctgggtgacg 660
ctcttcaaga acgccatcat caagaacgca cacaagaagg gccagtgagg gtgc 714

<210> 18
<211> 235
<212> PRT
<213> Rattus norvegicus

<400> 18

Met Pro Arg Phe Cys Tyr Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
1 5 10 15

Leu Leu Gln Thr Ser Ile Asp Val Trp Ser Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Arg Leu Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
85 90 95

Gly Ser Ala Gln Arg Arg Ala Glu Glu Glu Thr Ala Gly Gly Asp Gly
100 105 110

Arg Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Gln Pro Asp Gly Leu Glu Gln
165 170 175

Val Leu Glu Pro Asp Thr Glu Lys Ala Asp Gly Pro Tyr Arg Val Glu
180 185 190

His Phe Arg Trp Gly Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
210 215 220

Ala Ile Ile Lys Asn Val His Lys Lys Gly Gln
225 230 235

<211> 708
<212> DNA
<213> Mus musculus

<400> 19
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agcaacactgc tggcttgc cat ccggccttgc aaactcgacc tctcgctgga gacgcccgtg 180
tttcctggca acggagatga acagccccctg actgaaaacc cccggaagta cgtcatgggt 240
cacttccgct gggaccgctt cgccccagg aacagcagca gtgctggcag cgccggcgcag 300
aggcgtgcgg aggaagaggc ggtgtggga gatggcagtc cagagccgag tccacgcgag 360
ggcaagcgct cctactccat ggagcacttc cgctgggca agccggtgg caagaaacgg 420
cgccccgtga aggtgtaccc caacgttgct gagaacgagt cggcggaggc ctttcccta 480
gagttcaaga gggagctgga aggcgagcgg ccattaggct tggagcaggt cctggagtcc 540
gacgcggaga aggacgacgg gccttaccgg gtggagcact tccgctggag caacccgccc 600
aaggacaagc gttacggtgg cttcatgacc tccgagaaga gccagacgcc cctggtgacg 660
ctcttcaaga acgccatcat caagaacgcg cacaagaagg gccagtga 708

<210> 20
<211> 235
<212> PRT
<213> Mus musculus

<400> 20

Met Pro Arg Phe Cys Tyr Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
1 5 10 15

Leu Leu Gln Thr Ser Ile Asp Val Trp Ser Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Leu Asp Leu Ser Leu Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
85 90 95

Ser Ala Ala Gln Arg Arg Ala Glu Glu Glu Ala Val Trp Gly Asp Gly
100 105 110

Ser Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Arg Pro Leu Gly Leu Glu Gln
165 170 175

Val Leu Glu Ser Asp Ala Glu Lys Asp Asp Gly Pro Tyr Arg Val Glu
180 185 190

His Phe Arg Trp Ser Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
210 215 220

Ala Ile Ile Lys Asn Ala His Lys Lys Gly Gln
225 230 235

<210> 21
<211> 759
<212> DNA
<213> Gallus gallus

<400> 21
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accaccgcca gcggcccatg ctgggagaac agcaagtgcc aggacctggc caccgaggct 120
ggtgtttgc aggcgtgtgc caaggcatgc cgtgctgagc tgcggccga ggcacccgtg 180
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catttccgct ggaacaagtt cggccgtcgc aacagcagca gcgaggggca caaaagggag 300
gaggtggccg gcctcgccct gcctgcccgc tcacccacc accccgcccgg ggaggaggaa 360

gatggagaag	ggtttggAACG	agaggaaggg	aagcgctcct	actccatgga	gcattccgc	420
tggggcaagc	cgggtgggCG	gaagaggaga	cccatcaagg	tgtacccaa	cgggggtggac	480
gaggagtcgg	ctgagagtta	ccccatggag	ttccggaggg	agatggcgcc	cgatggggac	540
cccttcggcc	tctccgagga	ggaggaagaa	gaggaggaag	aggaaggcga	ggaggaaaag	600
aaggatggag	gctcgtaccg	catcgccac	ttccgctggc	acgcgcccgt	gaaggacaag	660
cgctacggcg	gcttcatgag	cttggagcac	agccagaccc	cgctgatgac	tctgttcaaa	720
aacgccatcg	tcaaaagcgc	ctacaagaag	ggtcagtga			759

<210> 22
<211> 251
<212> PRT
<213> Gallus gallus

<400> 22

Met	Arg	Gly	Ala	Leu	Cys	His	Ser	Leu	Pro	Val	Val	Leu	Gly	Leu	Leu
1				5				10				15			

Leu	Cys	His	Pro	Thr	Thr	Ala	Ser	Gly	Pro	Cys	Trp	Glu	Asn	Ser	Lys
			20				25				30				

Cys	Gln	Asp	Leu	Ala	Thr	Glu	Ala	Gly	Val	Leu	Ala	Cys	Ala	Lys	Ala
			35			40				45					

Cys	Arg	Ala	Glu	Leu	Ser	Ala	Glu	Ala	Pro	Val	Tyr	Pro	Gly	Asn	Gly
	50				55				60						

His	Leu	Gln	Pro	Leu	Ser	Glu	Ser	Ile	Arg	Lys	Tyr	Val	Met	Ser	His
65				70				75			80				

Phe	Arg	Trp	Asn	Lys	Phe	Gly	Arg	Arg	Asn	Ser	Ser	Gly	Gly	His	
			85				90				95				

Lys	Arg	Glu	Glu	Val	Ala	Gly	Leu	Ala	Leu	Pro	Ala	Ala	Ser	Pro	His
				100			105				110				

His	Pro	Ala	Gly	Glu	Glu	Glu	Asp	Gly	Glu	Gly	Leu	Glu	Arg	Glu	Glu
				115			120				125				

Gly	Lys	Arg	Ser	Tyr	Ser	Met	Glu	His	Phe	Arg	Trp	Gly	Lys	Pro	Val
				130			135			140					

Gly Arg Lys Arg Arg Pro Ile Lys Val Tyr Pro Asn Gly Val Asp Glu
145 150 155 160

Glu Ser Ala Glu Ser Tyr Pro Met Glu Phe Arg Arg Glu Met Ala Pro
165 170 175

Asp Gly Asp Pro Phe Gly Leu Ser Glu Glu Glu Glu Glu Glu
180 185 190

Glu Glu Gly Glu Glu Lys Lys Asp Gly Gly Ser Tyr Arg Met Arg
195 200 205

His Phe Arg Trp His Ala Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe
210 215 220

Met Ser Leu Glu His Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn
225 230 235 240

Ala Ile Val Lys Ser Ala Tyr Lys Lys Gly Gln
245 250

<210> 23
<211> 780
<212> DNA
<213> Bufo marinus

<400> 23
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ggtaggtca agagtcagtg ctgggagagc ggtaaatgtg cagatctgac gagcgaggat
gggatactgg aatgtattaa agactgcaag atggtcctgt ctgcagagtc accagtgttt 120
cctggaatg gacacatgca acccctctct gaaaacatca ggaagtatgt catgagccac
ttccgctgga ataagttgg ccgaaggaat agcaccggtg gcgatagcaa caacgcaggt
tacaaacggg aagatatagc caactacccc atatttaacc tggccccac taatgacaac 180
caaaaacacac aagatggcaa catggaagaa gaactacgca ggcaagacaa caagaggta
tattctatgg aacacttccg atgggtaaa ccagtcggga aaaaaaggag acctattaag
gtttcccaa gcgatgctga agaagaatca tctgaaatct scccaacaga gtacagaaga 240
gagttgtctg tagagttga ctaccccgat accaactctg aagaagacat ggacgacagc
atgttcatgg aaagccaaa tagaaaagat cggaagtata aaatgcatca tttcgatgg 300
360
420
480
540
600
660

gaaggtccac ccaaagacaa aagatatgga ggattcatga cccctgagcg cagtcagact 720
ccactaatga ctctttcaa aaatgccatt atcaaaaatg cccacaagaa gggtcaataa 780

<210> 24
<211> 259
<212> PRT
<213> Bufo marinus

<220>
<221> misc_feature
<222> (174)..(174)
<223> Xaa can be any naturally occurring amino acid

<400> 24

Met Leu Gln Pro Gly Trp Arg Cys Ile Leu Thr Ile Leu Gly Ala Phe
1 5 10 15

Ile Phe His Val Gly Glu Val Lys Ser Gln Cys Trp Glu Ser Gly Lys
20 25 30

Cys Ala Asp Leu Thr Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Asp
35 40 45

Cys Lys Met Val Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Gly Asp Ser
85 90 95

Asn Asn Ala Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe
100 105 110

Asn Leu Phe Pro Thr Asn Asp Asn Gln Asn Thr Gln Asp Gly Asn Met
115 120 125

Glu Glu Glu Leu Arg Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu
130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Ile Lys
145 150 155 160

Val Phe Pro Ser Asp Ala Glu Glu Glu Ser Ser Glu Ile Xaa Pro Thr
165 170 175

Glu Tyr Arg Arg Glu Leu Ser Val Glu Phe Asp Tyr Pro Asp Thr Asn
180 185 190

Ser Glu Glu Asp Met Asp Asp Ser Met Leu Met Glu Ser Pro Asn Arg
195 200 205

Lys Asp Arg Lys Tyr Lys Met His His Phe Arg Trp Glu Gly Pro Pro
210 215 220

Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
225 230 235 240

Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys
245 250 255

Lys Gly Gln

<210> 25
<211> 669
<212> DNA
<213> Cyprinus carpio

<400> 25
atggtgaggg gagagaggat gttgtgtcct gcttggctct tggctctggc tggtctgtgt 60
gcggctggat ctgaagtcaag agtcagtgt atggaggacg cccgctgcag agacccacc 120
actgatgaga acatcttggc ctgcatacag ctagcaggt ctgatctgac agatgaaacc 180
cccgcttacc ctggagaaaag ccatttgcag cctccctctg agctggagca aaccgaggc 240
ctcgtaaaaa ttccccccagg gcgcctcgct cctgctgagc aaatggaccc cgagtccagg 300
cctcagcacc agcacaagcg ctccatacatt atggagcatt tccgctgggg aaagccagg 360
ggtcgcaagc gcaggccatat caaggtgtac accaacggcg tggaggagga atccaccgag 420
actctcccag ctgagatgag ggcgcagctg gctacaaaacg agatcgacta tcctcaagag 480
gagggcgctt taaaccagca ggataagaag gatggctcct acaaaatgag ccatttccgc 540
tggagcagcc cgcctgcttag caagcgctat ggaggcattca tgaagtcctg ggacgagcgc 600
agtcagaaac cccttctcac gctttcaaa aacgtcataa acaaagagca ccagaagaag 660

gaccagtga

669

<210> 26
<211> 222
<212> PRT
<213> Cyprinus carpio

<400> 26

Met Val Arg Gly Glu Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
1 5 10 15

Ala Val Leu Cys Ala Ala Gly Ser Glu Val Arg Ala Gln Cys Met Glu
20 25 30

Asp Ala Arg Cys Arg Asp Leu Thr Thr Asp Glu Asn Ile Leu Asp Cys
35 40 45

Ile Gln Leu Cys Arg Ser Asp Leu Thr Asp Glu Thr Pro Val Tyr Pro
50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Leu Glu Gln Thr Glu Val
65 70 75 80

Leu Val Pro Leu Ser Pro Ala Ala Leu Ala Pro Ala Glu Gln Met Asp
85 90 95

Pro Glu Ser Ser Pro Gln His Glu His Lys Arg Ser Tyr Ser Met Glu
100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Ser Thr Glu Thr Leu Pro Ala
130 135 140

Glu Met Arg Arg Glu Leu Ala Thr Asn Glu Ile Asp Tyr Pro Gln Glu
145 150 155 160

Glu Gly Ala Leu Asn Gln Gln Asp Lys Lys Asp Gly Ser Tyr Lys Met
165 170 175

Ser His Phe Arg Trp Ser Ser Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ser Gln Lys Pro Leu Leu Thr Leu
195 200 205

Phe Lys Asn Val Ile Asn Lys Glu His Gln Lys Lys Asp Gln
210 215 220

<210> 27
<211> 669
<212> DNA
<213> Danio rerio

<400> 27
atggtaggg gagtgaggat gttgtgtcct gcttggctct tggctctggc tgttctctgc 60
gcaggaggat ctgaagtcaag agctcagtgt tggaaaaatg cccgctgtcg agacacctcagc 120
acagaggaga acatcttggaa atgcatacaa ttatgcaggt ctgaacttac agatgaaacc 180
cccgtctacc ctggagaaaag ccatctacag cctccctccg agccggagca aatcgacctc 240
ctcgcacacc tttcccctgt agcactcgca gccctgtAAC agatagagcc ggagtccggc 300
cctcgacacg accacaagcg ctcctactcc atgaaacact tccgggtgggg caaaccggtc 360
ggccgcaaac gcagaccat caaggtgtac acgaacggcg tggaagagga atccgcccga 420
acgcttccgg aagagatgag acgcgagctg gcaaataacg aggtcgacta tccgcaagaa 480
gagatgcctt taaaccact gggaaagaag gaccccccct acaaaatgac ccattccgc 540
tggagcgtcc cgccggctag caagcgctat ggaggcttca tgaagtccctg ggacgagcgt 600
gctcagaaac cactgctcac actcttcaaa aacgtaatgc ataaaggcca accgaggaag 660
gatgagtga 669

<210> 28
<211> 222
<212> PRT
<213> Danio rerio

<400> 28

Met Val Arg Gly Val Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
1 5 10 15

Ala Val Leu Cys Ala Gly Gly Ser Glu Val Arg Ala Gln Cys Trp Glu
20 25 30

Asn Ala Arg Cys Arg Asp Leu Ser Thr Glu Glu Asn Ile Leu Glu Cys

35

40

45

Ile Gln Leu Cys Arg Ser Glu Leu Thr Asp Glu Thr Pro Val Tyr Pro
50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Pro Glu Gln Ile Asp Leu
65 70 75 80

Leu Ala His Leu Ser Pro Val Ala Leu Ala Ala Pro Glu Gln Ile Glu
85 90 95

Pro Glu Ser Gly Pro Arg His Asp His Lys Arg Ser Tyr Ser Met Glu
100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Ser Ala Glu Thr Leu Pro Glu
130 135 140

Glu Met Arg Arg Glu Leu Ala Asn Asn Glu Val Asp Tyr Pro Gln Glu
145 150 155 160

Glu Met Pro Leu Asn Pro Leu Gly Lys Lys Asp Pro Pro Tyr Lys Met
165 170 175

Thr His Phe Arg Trp Ser Val Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ala Gln Lys Pro Leu Leu Thr Leu
195 200 205

Phe Lys Asn Val Met His Lys Gly Gln Pro Arg Lys Asp Glu
210 215 220

<210> 29
<211> 792
<212> DNA
<213> Rana catesbeiana

<400> 29
atgttgcagc cagtctggca cgccctgtatc ctggcaataac ttgggggtgtt catatttcat 60
gtcggagagg tccggagcca gtgctggaa agcaataagt gtacagattt aagcagcgaa 120

gatggcattc	tggaatgtat	caaagcatgc	aagatggacc	tctctgcaga	atctcccgta	180
tttcccgca	atggccacat	ccagcccctt	tctgaaaaca	tcagggaaata	tgtcatgagc	240
cactttcgct	ggaataaaatt	tggtagaagg	aacagcacca	gcaatgacaa	caacaacaac	300
aatggtggt	ataagcggga	ggatattgcc	aactacccta	tattgaacct	gttccttggc	360
agcgacaacc	aaaacacaca	ggagggattt	atgaaagatg	acgccttgg	taggcaagac	420
agcaaaaggt	cttattccat	ggagcacttc	cgtggggaa	aaccgcgtcg	caagaagagg	480
aggcctatca	aagttttccc	cacagatgct	gaagaagagt	cctcagaaag	tttccccatt	540
gagctgagaa	gagagctctc	tctagagttt	gactatcctg	acaccaactc	cgaagaagaa	600
ttggataatg	gcgagctgct	agaaggtcca	gttaaaaaag	gttaggaagta	caaaatgcac	660
catttccgat	gggaaggacc	tcccaaagac	aagcggtatg	gtggatttat	gaccccagag	720
agaagccaga	caccttaat	gactttttc	aagaatgcta	taattaagaa	cgcacacaaa	780
aaggccagt	ag					792

<210> 30

<211> 263

<212> PRT

<213> Rana catesbeiana

<400> 30

Met	Leu	Gln	Pro	Val	Trp	His	Ala	Cys	Ile	Leu	Ala	Ile	Leu	Gly	Val
1				5					10					15	

Phe	Ile	Phe	His	Val	Gly	Glu	Val	Arg	Ser	Gln	Cys	Trp	Glu	Ser	Asn
				20				25					30		

Lys	Cys	Thr	Asp	Leu	Ser	Ser	Glu	Asp	Gly	Ile	Leu	Glu	Cys	Ile	Lys
					35			40					45		

Ala	Cys	Lys	Met	Asp	Leu	Ser	Ala	Glu	Ser	Pro	Val	Phe	Pro	Gly	Asn
			50				55				60				

Gly	His	Ile	Gln	Pro	Leu	Ser	Glu	Asn	Ile	Arg	Lys	Tyr	Val	Met	Ser
			65				70			75			80		

His	Phe	Arg	Trp	Asn	Lys	Phe	Gly	Arg	Arg	Asn	Ser	Thr	Ser	Asn	Asp
				85				90					95		

Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr

100

105

110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Glu Ser Ser Glu
165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
180 185 190

Pro Asp Thr Asn Ser Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 31
<211> 272
<212> PRT
<213> Monodelphis domestica

<400> 31

Met Pro Lys Pro Ser Trp Ser Tyr Leu Gly Ala Leu Leu Val Ala Val
1 5 10 15

Leu Phe Gln Ala Ser Val Glu Val His Gly Trp Cys Leu Gln Ala Ser
20 25 30

Asn Cys Arg Asp Ser Lys Ala Glu Asp Gly Leu Val Glu Cys Ile Lys
35 40 45

Ser Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly Gln Tyr Glu Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ile Ser Ser Gly Ser
85 90 95

Ile Ser Ser Asp Gly Gly Asn Val Gly Gln Lys Arg Gln Glu Leu Met
100 105 110

Gln Gly Asp Phe Leu Asp Leu Pro Pro Pro Gly Val Trp Gly Glu Asp
115 120 125

Glu Glu Met Gln Glu Gly Leu Pro Leu Ile Arg Lys Ala Arg Glu Leu
130 135 140

Gln Asn Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
145 150 155 160

Val Gly Lys Lys Arg Arg Pro Val Lys Ile Tyr Pro Asn Gly Val Glu
165 170 175

Glu Glu Ser Ala Glu Ser Tyr Pro Val Glu Ile Arg Arg Asp Leu Pro
180 185 190

Met Lys Ile Asn Phe Pro Glu Tyr Pro Glu Leu Ala Ile Asp Glu Glu
195 200 205

Glu Ala Ala Lys Glu Val Tyr Glu Glu Lys Val Lys Lys Asp Gly Gly
210 215 220

Gly Tyr Lys Met Glu His Phe Arg Trp Gly Thr Pro Pro Lys Asp Lys
225 230 235 240

Arg Tyr Gly Gly Phe Met Ile Ser Glu Lys Ser His Thr Pro Leu Met
245 250 255

Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Gly His Lys Lys Gly Gln
260 265 270

<210> 32
<211> 263
<212> PRT
<213> Ovis aries

<220>
<221> misc_feature
<222> (184)..(184)
<223> Xaa can be any naturally occurring amino acid

<400> 32

Met Pro Arg Leu Cys Ser Ser Arg Ser Gly Ala Leu Leu Leu Val Leu
1 5 10 15

Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe
85 90 95

Gly Ala Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu
115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
165 170 175

Glu Arg Leu Glu Gln Ala Arg Xaa Pro Glu Ala Gln Ala Glu Ser Ala
180 185 190

Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
195 200 205

Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp
210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu
225 230 235 240

Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 33
<211> 212
<212> PRT
<213> Ovis aries

<220>
<221> misc_feature
<222> (120)..(121)
<223> Xaa can be any naturally occurring amino acid

<400> 33

Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn Cys Asp Glu
1 5 10 15

Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
20 25 30

Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe Gly Ala Gly
35 40 45

Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly Glu Gly Pro
50 55 60

Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu Asp Lys Arg
65 70 75 80

Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys
85 90 95

Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala
100 105 110

Gln Ala Phe Pro Leu Glu Phe Xaa Xaa Glu Leu Thr Gly Glu Arg Leu
115 120 125

Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala Ala Ala Arg
130 135 140

Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala Ala Glu Lys
145 150 155 160

Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly Ser Pro
165 170 175

Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln
180 185 190

Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His
195 200 205

Lys Lys Gly Gln
210

<210> 34
<211> 263
<212> PRT
<213> Rana catesbeiana

<400> 34

Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
1 5 10 15

Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
20 25 30

Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
85 90 95

Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr
100 105 110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Ser Ser Glu
165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
180 185 190

Pro Asp Thr Asn Ser Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 35
<211> 258
<212> PRT
<213> Spea multiplicata

<400> 35

Met Leu Cys Pro Val Trp Ser Cys Leu Phe Ala Val Leu Gly Val Phe
1 5 10 15

Val Phe His Val Gly Glu Val Arg Gly Gln Cys Trp Gln Ser Ala Lys
20 25 30

Cys Met Asp Leu Glu Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Ile Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ala Glu Asn Val Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Thr Thr Gly Asn Glu Gly
85 90 95

Asn Ser Gly Ser Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe Asn
100 105 110

Leu Phe Pro Ser Ser Asn Gly Gln Asn Thr Glu Asp Asn Met Trp Lys
115 120 125

Lys Tyr Gln Asp Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Phe Pro Asn Gly Met Glu Glu Ser Ser Glu Ser Tyr Pro Met Glu
165 170 175

Leu Arg Arg Glu Leu Ser Leu Glu Asp Asp Tyr Pro Glu Ile Asp Ser
180 185 190

Glu Asp Asp Leu Asp Tyr Asn Asp Leu Leu Ser Met Pro Lys Phe Lys

195

200

205

Gly Gly Asp Tyr Arg Ile His His Phe Arg Trp Gly Ser Pro Pro Lys
210 215 220

Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr Pro
225 230 235 240

Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys Lys
245 250 255

Ala Gln

<210> 36

<211> 259

<212> PRT

<213> Xenopus laevis

<400> 36

Met Phe Arg Pro Leu Trp Gly Cys Phe Leu Ala Ile Leu Gly Ile Cys
1 5 10 15

Ile Phe His Ile Gly Glu Val Gln Ser Gln Cys Trp Glu Ser Ser Arg
20 25 30

Cys Ala Asp Leu Ser Ser Glu Asp Gly Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ser Glu Ser Ile Arg Lys Tyr Val Met Thr His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Asn Asp Gly
85 90 95

Ser Asn Thr Gly Tyr Lys Arg Glu Asp Ile Ser Ser Tyr Pro Val Phe
100 105 110

Ser Leu Phe Pro Leu Ser Asp Gln Asn Ala Pro Gly Asp Asn Met Glu
115 120 125

Glu Glu Pro Leu Asp Arg Gln Glu Asn Lys Arg Ala Tyr Ser Met Glu
130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
145 150 155 160

Val Tyr Pro Asn Gly Val Glu Glu Ser Ala Glu Ser Tyr Pro Met
165 170 175

Glu Leu Arg Arg Glu Leu Ser Leu Glu Leu Asp Tyr Pro Glu Ile Asp
180 185 190

Leu Asp Glu Asp Ile Glu Asp Asn Glu Val Lys Ser Ala Leu Thr Lys
195 200 205

Lys Asn Gly Asn Tyr Arg Met His His Phe Arg Trp Gly Ser Pro Pro
210 215 220

Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
225 230 235 240

Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ser His Lys
245 250 255

Lys Gly Gln

<210> 37
<211> 262
<212> PRT
<213> Necturus maculosus

<220>
<221> misc_feature
<222> (129)..(129)
<223> Xaa can be any naturally occurring amino acid

<400> 37

Met Leu Lys Pro Val Trp Ser Cys Leu Phe Ala Thr Leu Gly Ala Leu
1 5 10 15

Leu Cys Gln Thr Val Val Ala His Ser Gln Cys Trp Glu Ser Ser Lys
20 25 30

Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Gln Phe Gly Arg Lys Asn Ser Thr Val Ala Ser Gly
85 90 95

Asn Gly Ala Gly Ser Lys Arg Glu Glu Leu Ser Gly Asn Pro Ile Ile
100 105 110

Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala His Asp Ser
115 120 125

Xaa Lys Glu Gly Glu Val Met Asp Arg Gln Asp Asn Lys Arg Ser Tyr
130 135 140

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg
145 150 155 160

Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Ser Ser Glu Ser
165 170 175

Tyr Pro Leu Glu Leu Lys Arg Asp Leu Ser Leu Gly Leu Glu Tyr Pro
180 185 190

Glu Phe Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Val Met Val Val
195 200 205

Leu Pro Glu Lys Lys Asp Gly Asn Tyr Arg Met His His Phe Arg Trp
210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn
245 250 255

Ala His Lys Lys Gly Gln
260

<210> 38
<211> 262
<212> PRT
<213> Amphiuma means

<400> 38

Met Leu Arg Pro Val Trp Ser Cys Leu Pro Ala Thr Leu Gly Ala Leu
1 5 10 15

Leu Cys Gln Thr Ala Gly Ala Asn Ser Gln Cys Trp Glu Ser Ser Lys
20 25 30

Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Thr Ser Val Ser Gly
85 90 95

Asn Ser Ala Gly Asn Lys Arg Glu Glu Leu Ser Asn Asn Pro Ile Ile
100 105 110

Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala Asp Asp Gly
115 120 125

Asn Lys Glu Gly Glu Ala Met Glu Arg Gln Asp Ser Lys Arg Ser Tyr
130 135 140

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg
145 150 155 160

Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ser Glu Ser
165 170 175

Tyr Pro Leu Glu Leu Arg Arg Asp Leu Ser Leu Gly Leu Asp Tyr Pro
180 185 190

Asp Ser Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Ile Thr Thr Gly
195 200 205

Leu Thr Lys Lys Asn Asp Lys Gln Tyr Arg Ile Gly His Phe Arg Trp
210 215 220

Gly Ser Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn
245 250 255

Ala His Lys Lys Gly Gln
260

<210> 39
<211> 261
<212> PRT
<213> Pelodiscus sinensis

<400> 39

Met Leu Lys Pro Val Arg Ser Gly Leu Leu Ala Ile Leu Gly Val Leu
1 5 10 15

Leu Phe His Ala Asp Gly Gly Val His Ser Gln Cys Trp Asp Ser Ser
20 25 30

Arg Cys Arg Glu Leu Ser Thr Asp Ala Gly Leu Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Asp Glu Ser Pro Met Tyr Pro Gly Asn
50 55 60

Gly His Leu Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Ser Ser Val
85 90 95

Ala Gly His Lys Arg Glu Glu Ile Pro Ser His Leu Leu Leu Gly Leu
100 105 110

Phe Pro Asp Val Ala Pro Ala Gln Arg Gly Asp Asp Gly Glu Gly Gly
115 120 125

Ala Ala Leu Glu Arg Gln Asp Ser Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Tyr Pro Ser Glu Val Glu Glu Ser Ala Glu Ser Tyr Pro Pro Glu
165 170 175

Phe Arg Arg Asp Leu Ser Met Glu Leu Asp Tyr Pro Glu Phe Glu Ser
180 185 190

Leu Glu Asp Pro Glu Ser Glu Glu Ala Leu Val Ser Glu Glu Ala Glu
195 200 205

Lys Lys Asp Gly Asn Ser Tyr Lys Met His His Phe Arg Trp Asn Ala
210 215 220

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Ser Ser
225 230 235 240

Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala
245 250 255

Tyr Lys Lys Gly Gln
260

<210> 40
<211> 187
<212> PRT
<213> Pan troglodytes

<400> 40

Ser Ala Glu Thr Pro Met Phe Pro Gly Asn Gly Asp Glu Gln Pro Leu
1 5 10 15

Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
20 25 30

Phe Gly Arg Arg Asn Ser Ser Ser Ser Ser Gly Ser Gly Ala Gly
35 40 45

Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro
50 55 60

Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg
65 70 75 80

Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
85 90 95

Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu
100 105 110

Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr
115 120 125

Gly Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp
130 135 140

Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala
145 150 155 160

Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg Trp Gly
165 170 175

Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

<210> 41
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 41
gcttgcaaac tcgacacctc 20

<210> 42
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 42
cttgatgatg gcgttcttga 20

<210> 43
<211> 22
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 43
aggcatcag aaggcctgac ca 22

<210> 44
<211> 22
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 44
cttgaagaag cggcagttagc ac 22

<210> 45
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 45
gtttgcaaac tcgacaccttc 20

<210> 46
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 46
cttgatgatg gcgttcttga 20

<210> 47
<211> 21
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 47
atggggctgt gtggactgac c

21

<210> 48
<211> 22
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 48
gtcaggagag caagtttcat tt

22

<210> 49
<211> 22
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 49
agggcatcg aaggcctgac ca

22

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